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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/390,554	09/03/1999	DANILO PAU	98AG07053137	7097

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EXAMINER

PHILIPPE, GIMS S

ART UNIT PAPER NUMBER

2621

DATE MAILED: 08/18/2006

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/390,554

Applicant(s)

PAU ET AL.

Examiner

Gims S. Philippe

Art Unit

2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8 and 12 is/are allowed.
- 6) ☒ Claim(s) 5-7 and 9-11, 13, 14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

1. This Office action is in response to a Board of Appeal decision rendered on April 28, 2006. After an updated search, prosecution of the application was re-opened in light of a newly found prior art. Therefore, the decision with respect to claims 5-14 has been considered but is moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005 <<http://www.uspto.gov/web/offices/com/sol/og/2005/week47/og200547.htm>>), Annex 5, reads as follows:

If the "acts" of a claimed process manipulate only numbers, abstract concepts or ideas, or signals representing any of the foregoing, the acts are not being applied to appropriate subject matter. Benson, 409 U.S. at 71-72, 175 USPQ at 676. Thus, a process consisting solely of mathematical operations, i.e., converting one set of numbers into another set of numbers, does not manipulate appropriate subject matter and thus cannot constitute a statutory process.

In practical terms, claims define nonstatutory processes if they:

- consist solely of mathematical operations without some claimed practical application (i.e., executing a "mathematical algorithm"); or
- simply manipulate abstract ideas, e.g., a bid (Schrader, 22 F.3d at 293-94, 30 USPQ2d at 1458-59) or a bubble hierarchy (Warmerdam, 33 F.3d at 1360, 31 USPQ2d at 1759), without some claimed practical application.

3. Claims 5-7, 9-11, 13 and 14 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows:

Claims 5-7, 9-11 and 13-14 call for calculating in parallel the DCT of 2^i range blocks and domain blocks of $N \times N$ pixels of the image while defining a first subdivision having a fractional and scalable size $N/2^i \times N/2^i$, where i is an integer, and also a second subdivision of blocks of $N \times N$ pixels as domain blocks, shiftable by intervals of $N/2^i$ pixels.

The recited method and apparatus do nothing more than solve mathematical problems by manipulating only numbers to provide a result. In other words, the result of calculating in parallel the DCT of 2^i range blocks and domain blocks of $N \times N$ pixels is nothing more than converting a set of numbers to another set of numbers. Appropriate subject matter with practical application has not been found to be manipulated; therefore, the result of the claimed calculation cannot constitute a statutory process.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 9-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The means plus function language of the claims creates uncertainty as to what the applicant regards as the invention, in that the claims are not supported by corresponding structure in the Specification disclosure.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5, 9, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhao et al. (A hybrid image compression scheme combining block-based fractal and coding DCT, Signal processing: Image communication, 8 March 1996, No. 2, pp. 73-78) in view of Feig et al. (US Patent no. 5,293,434).

Regarding claims 5, 9 and 13, Zhao et al. discloses an apparatus and method of calculating the discrete cosine transform (DCT) of blocks of pixels of an image, comprising the steps of defining first subdivision blocks as range blocks, having a fractional and scalable size $N/2^i * N/2^i$, where i is an integer, defining second subdivision blocks of $N*N$ pixels as domain blocks, shiftable by intervals of $N/2^i$ pixels (See Zhao p. 74, right column lines 1-10 where a subdivision of range blocks and domain blocks is reformed). Note that since the size of the range block is selectable based on image quality, the "scalability" is inherent in a block size (See Zhao fig. 4, and pp.77).

It is noted that Zhao is silent about calculating in parallel the DCT of 2^i range blocks of domain blocks of $N*N$ pixels of the image.

However, Feig discloses a method of calculating discrete cosine transform of blocks of pixels including comprising the step of calculating in parallel the DCT of 2^i range blocks of domain blocks of $N \times N$ pixels of the image (See Feig Fig. 8, items 820, to 820_N, and col. 15, lines 44-68, col. 16, lines 1-19).

Therefore, it is considered obvious that one skilled in the art at the time of the invention would recognize the advantage of modifying Zhao' step of providing range blocks and domain blocks in a DCT method by incorporating Feig's step of calculation of 2^i range blocks of domain blocks of $N \times N$ pixels of the image. The motivation for such a modification in Zhao is to provide an efficient compression method while limiting error propagation as taught by (See Feig col. 14, lines 42-46).

Allowable Subject Matter


6. Claims 8 and 12 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gims S. Philippe whose telephone number is (571) 272-7336. The examiner can normally be reached on M-F (10:30-7:00).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dastouri S. Mehrdad can be reached on (571) 272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Gims S Philippe
Primary Examiner
Art Unit 2621

GSP

August 16, 2006


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